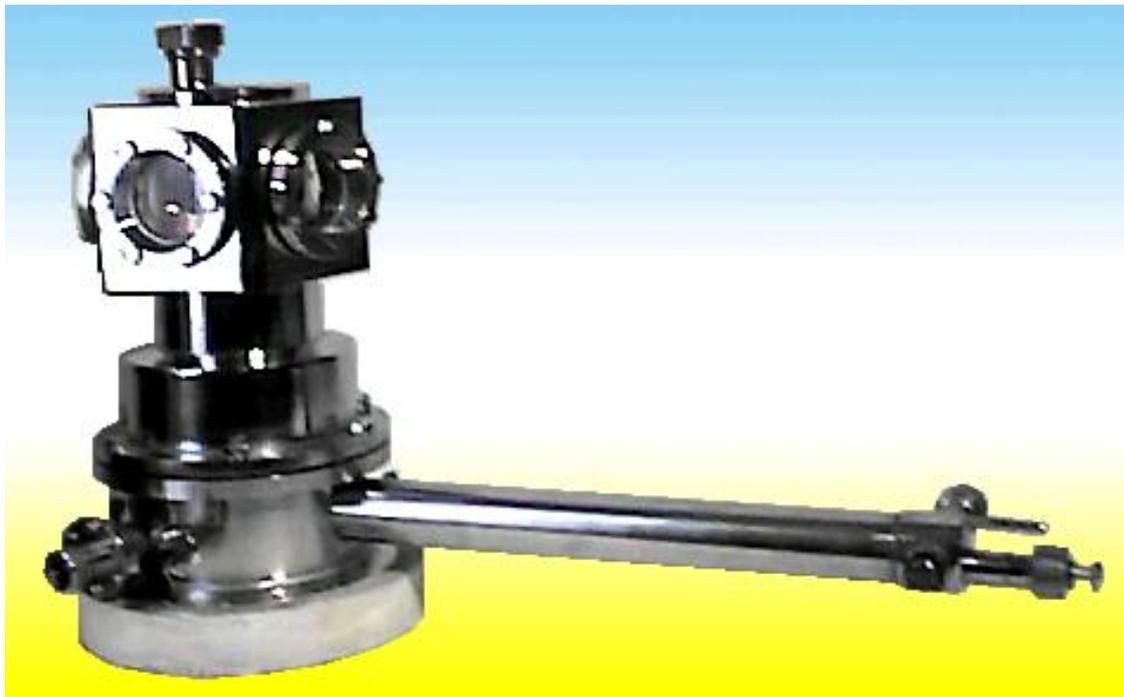




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SMALL-SIZE OPTICAL CTR-CRYOSTATS



Cryostats of “CTR” series are designed for transmission and reflection coefficient measurements of different samples in temperature range from He to room temperatures.

Mode of functioning

A sample holder with a sample is placed in vacuum. Refrigerant is fed into heat exchanger with a built in temperature control system heater through filling tube by pumping or by expulsion at the expense of overpressure in transport Dewar vessel.

The sample is changing after heating and depressurization of the cryostat. For sample changing the cryostat and screen upper flange must be removed.

The sample holder cooling is carried out by two methods of cryostat construction:

- In CTR-R cryostats the sample holder with the built in heat exchanger is blown off by refrigerant with required temperature.

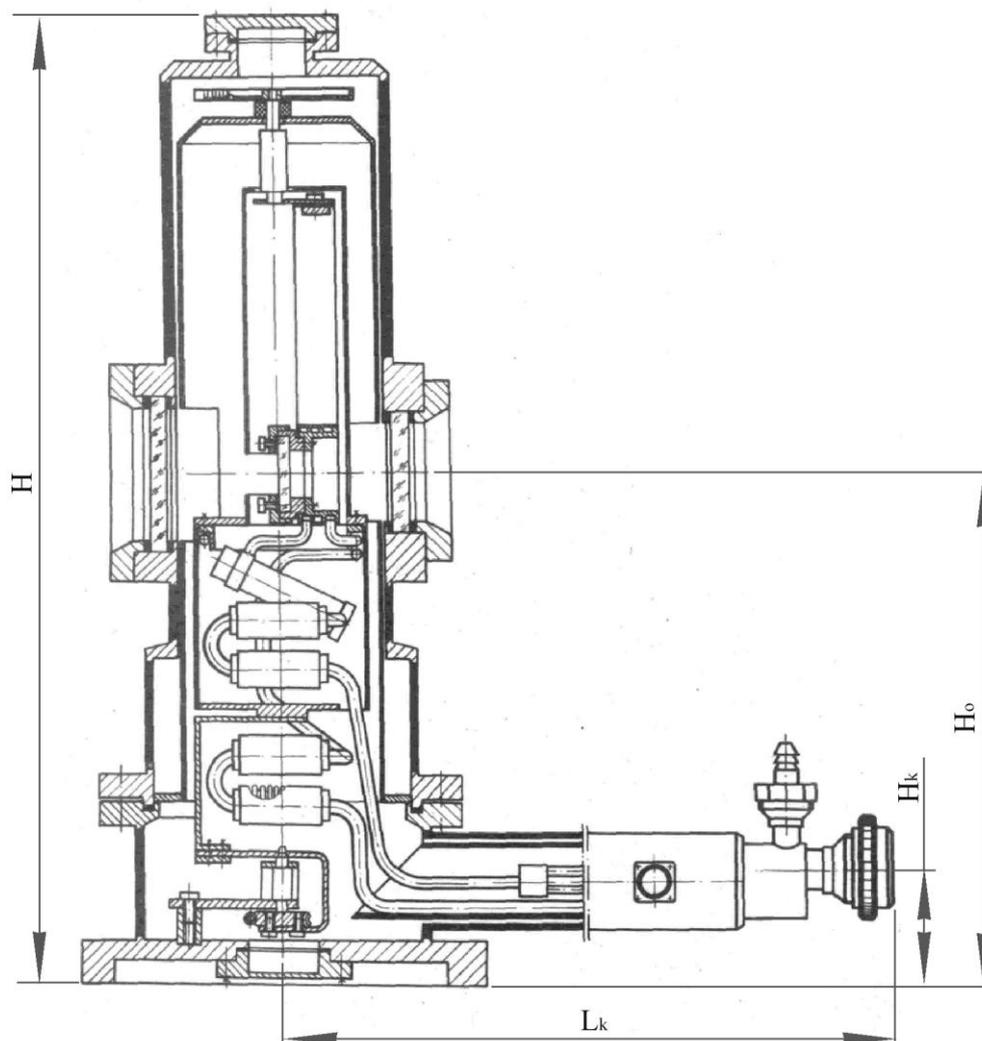


Fig.1

- In CTR-W cryostats the sample temperature is controlled by heat conducting wire which is connected with the heat exchanger of temperature control system.

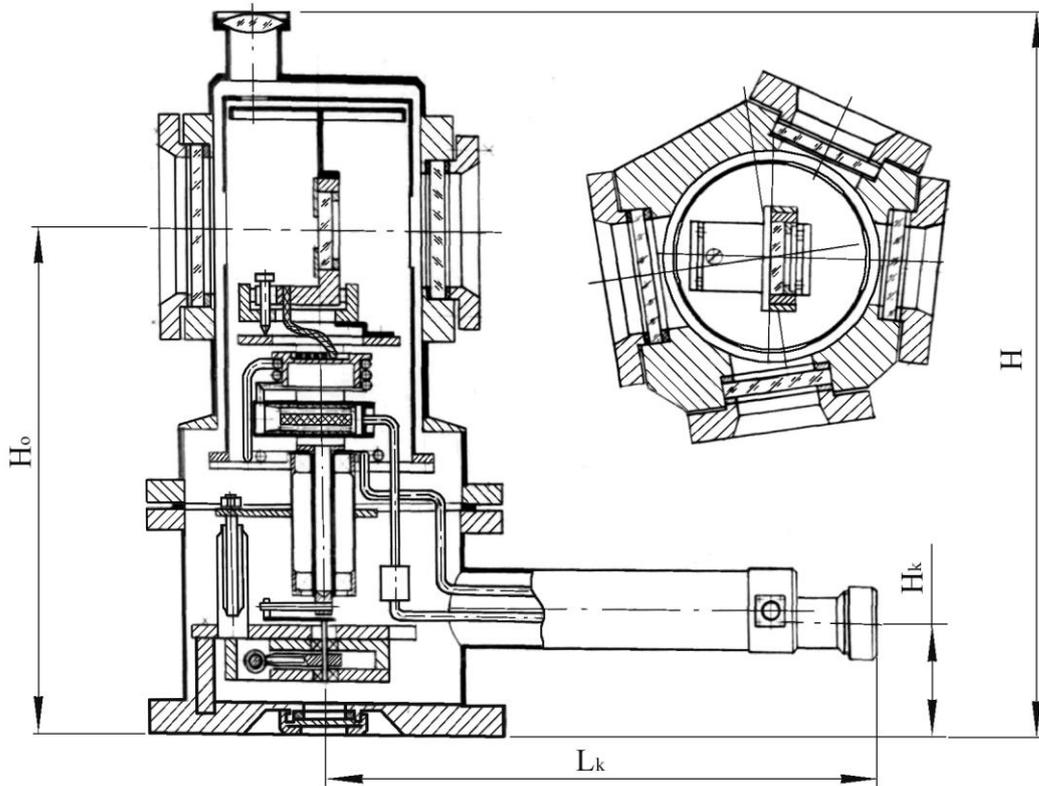


Fig.2

Application

The cryostats are used for temperature dependence measurements of:

- transmission coefficient of hard materials and coverings (e.g. filters) at different angle values of arrival of probing radiation;
- reflection coefficient for hard materials and coverings at three fixed angles of arrival of probing radiation: 12° , 45° , 60° ;
- transmission coefficient of liquids placed in ampoules;
- luminescent specter, etc.

The cryostats are designed for using as cryogenic adapters to specialized optical devices.

Performance specification

Temperature control range, K	CTR-R	CTR-W
- using liquid helium at consumption 1 l/h	3.5 – 300	10 – 300
- using liquid nitrogen at consumption 1 l/h	65 – 300	85 – 300
Angle of rotation around the vertical axe of the sample holder, deg.	- 45 – 60	
Dimensions, mm		
- H	340	
- H _o	240	
- L _k	520	
- H _k	45	
- Weight, kg	18	
Sample dimensions, mm		
- diameter	10 – 40	
- thickness	1 – 10	

Merits

- High certainly of results of transmission and reflection coefficient measurements in wide angle range of arrival of probing radiation within one experiment.
- High vacuum and no-sediments on sample surface during the experiment. It is conditioned on application of the built in cryopump.
- Extended spectral range of investigation because of existing of exchanging windows.
 - Efficiency in experiment preparation and realization.

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